

REMARKS

The rejection of Claims 1 and 5-21 under 35 U.S.C. 103(a) as unpatentable over US 4,663,377 (Hombach et al) and US 6,472,493 (Huynh-Ba) in view of US 6,426,414 (Laas et al), is respectfully traversed.

The present claims are now drawn to the disclosed embodiment wherein emulsifying compound (C1) is reacted with HDI-trimer (A), thereby forming emulsifier (C), which is mixed with IPDI-trimer (B). Such an embodiment is exemplified in Example 1, described in the specification beginning at page 17, line 15, wherein the reaction product of (A) and (C1) is referred to as hydrophilicized isocyanate a1. As described therein beginning at page 17, line 26, like isocyanate a1 itself, the resulting mixtures can be emulsified effectively in water by simple stirring, to produce fine emulsions, but have more rapid increases in hardness and higher ultimate hardnesses compared to isocyanate a1 alone. See Tables 1 and 2 at page 17, line 31 through page 18, line 14 of the specification, wherein Comparative, C contains isocyanate a1 alone.

Example 1 is an example of the presently-claimed embodiment wherein no solvent is used. In addition, the presently-claimed embodiment is shown to result in greater hardness, especially at higher baking temperatures, compared to the disclosed embodiment 3) herein, wherein the at least one emulsifier (C) is obtained by reacting a mixture of (A) and (B) with at least one compound (C1), which is described in the specification at page 9, lines 12-14. In other words, both polyisocyanates (A) and (B) are hydrophilicized. Data for such an embodiment are shown in Example 2, which also contains no solvent, described in the specification beginning at page 18, line 16. Data analogous to above-discussed Tables 1 and 2 are in Tables 3 and 4, respectively, at page 18, line 35 through page 19, line 13 of the specification. Applicable comparisons, i.e., same relative amounts of isocyanate components,

are between Example 1.1 with Example 2.2; Example 1.2 with Example 2.3; and Example 1.3 with Example 2.4.

When a solvent is present, applicable comparisons are between Example 3.1, which is described under Example 3, beginning in the specification at page 19, line 18, the composition of which is shown in Table 5, and which is according to the presently-claimed embodiment, and Example 4.2, described in the specification under Example 4, beginning at page 20, line 18, the composition of which is shown in Table 7. Compare the hardness data in Table 6 with the data in Table 8.

The applied prior art could not have predicted such a benefit.

Hombach et al discloses an aliphatic polyisocyanate preparation in which an emulsifier sufficient to ensure the dispersibility of the polyisocyanate(s) is present (column 2, lines 13-19). The emulsifiers are produced by reacting the aliphatic polyisocyanates with hydrophilic compounds containing isocyanate-reactive groups (column 4, line 37ff).

Huynh-Ba is relied on for a disclosure of an approach in the prior art used to improve the initial hardness and water resistance of a clear coat composition on curing, which involves replacing a portion of the conventional polyisocyanate crosslinking agent like HDI trimer with a relatively hard or rigid material, such as IPDI trimer (column 1, lines 51-56), and the disclosure of the invention of Huynh-Ba wherein an organic polyisocyanate component contains about 3-50% by weight of IPDI trimer and about 50-97% by weight of preferably HDI trimer (column 3, lines 9-16).

However, even if Hombach et al and Huynh-Ba were combined, the presently-claimed invention would still not be rendered obvious since there is no disclosure or suggestion in either reference to form an emulsifier based on HDI only, i.e., not based on HDI and IPDI, and to combine this emulsifier with IPDI, nor could this prior art have

predicted the improved hardness obtained, as demonstrated by the above-discussed comparative data.

Laas et al has been relied on for a disclosure of solvents. But Laas et al does not remedy the above-discussed deficiencies in the combination of Hombach et al and Huynh-Ba.

For all the above reasons, it is respectfully requested that the above rejection be withdrawn.

The rejection of Claims 1 and 5-15 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Indeed, the rejection would now appear to be moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the rejection be withdrawn.

All of the presently-pending claims in this application are believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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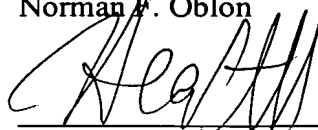
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